

U.S. Nuclear Comeback Stalls as Two Reactors Are Abandoned



The V.C. Summer nuclear project near Jenkinsville, S.C. The owners, Santee Cooper and South Carolina Gas & Electric, announced Monday that they were abandoning two unfinished nuclear reactors rather than saddle customers with additional costs.

Chuck Burton/Associated Press

In a major blow to the future of nuclear power in the United States, two South Carolina utilities [said on Monday](#) that they would abandon two unfinished nuclear reactors in the state, putting an end to a project that was once expected to showcase advanced nuclear technology but has since been plagued by delays and cost overruns.

The two reactors, which have cost the utilities roughly \$9 billion, remain less than 40 percent built. The cancellation means there are just two new nuclear

units being built in the country — both in Georgia — [while more than a dozen older nuclear plants are being retired](#) in the face of low [natural gas](#) prices.

Originally scheduled to come online by 2018, the V.C. Summer nuclear project in South Carolina [had been plagued by disputes with regulators and numerous construction problems](#). This year, utility officials estimated that the reactors would not begin generating electricity before 2021 and could [cost as much as \\$25 billion](#) — more than twice the initial \$11.5 billion estimate.

The utilities also struggled with an energy landscape that had changed dramatically since the large reactors were proposed in 2007. Demand for electricity [has plateaued nationwide](#) as a result of major improvements in energy efficiency, weakening the case for massive new power plants. And a glut of cheap natural gas from the hydraulic fracturing boom has given states a low-cost energy alternative.

Facing those pressures, the two owners of the project, South Carolina Electric & Gas and Santee Cooper, announced they would halt construction rather than saddle customers with additional costs.

“Many factors outside our control have changed since inception of this project,” Kevin Marsh, the chief executive of [Scana Corporation](#), which owns South Carolina Electric & Gas, said in a statement. “Ceasing work on the project was our least desired option, but this is the right thing to do at this time.”

A decade ago, industry officials were predicting a [“nuclear renaissance”](#) in a country that had not broken ground on a new reactor since the 1970s.

The South Carolina utilities selected an advanced reactor design from Westinghouse Electric Company, the [AP1000](#), reported to have more safety features than earlier models. The utilities planned to build the two reactors next to an existing nuclear unit at the V.C. Summer plant in Fairfield County.

But pitfalls soon followed. Construction began before Westinghouse, a subsidiary of [Toshiba](#) of Japan, had finalized its AP1000 design, and several safety changes [had to be made midway through the process](#). Engineers struggled with the complicated, novel project, as various components [needed to be reworked](#).

“This was a first-of-a-kind project, so it was always going to be hard,” said Rich Powell, executive director of the ClearPath Foundation, a clean-energy group in Washington. “But you can also see this as a symptom of a broader problem. We’ve let our nuclear industry atrophy for 30 years, and we’ve lost the robust supply chains and expertise needed” in building reactors.



The V.C. Summer project in September 2016. The two reactors, scheduled to come online by 2018, have cost South Carolina \$9 billion and remain less than 40 percent built. Chuck Burton/Associated Press

In 2015, Westinghouse took over as lead contractor on the South Carolina project after buying out its partners, but analysts say the company did not have sufficient expertise in handling large construction projects.

In March, faced with mounting losses at its nuclear endeavors in South Carolina and Georgia, [Westinghouse filed for bankruptcy](#). Toshiba agreed to pay \$2.2 billion in exchange for being released from the South Carolina project, but utility officials said that was unlikely to be sufficient to finish the reactors.

Under South Carolina law, the utilities were allowed to charge ratepayers for construction costs before the reactors were finished. The nuclear project now accounts for 18 percent of the electric bills of South Carolina Electric & Gas's residential customers. Santee Cooper, a state-owned utility, has increased rates five times to pay for the reactors.

Some environmental groups are now urging state regulators to refund those charges, arguing that the companies misled their customers.

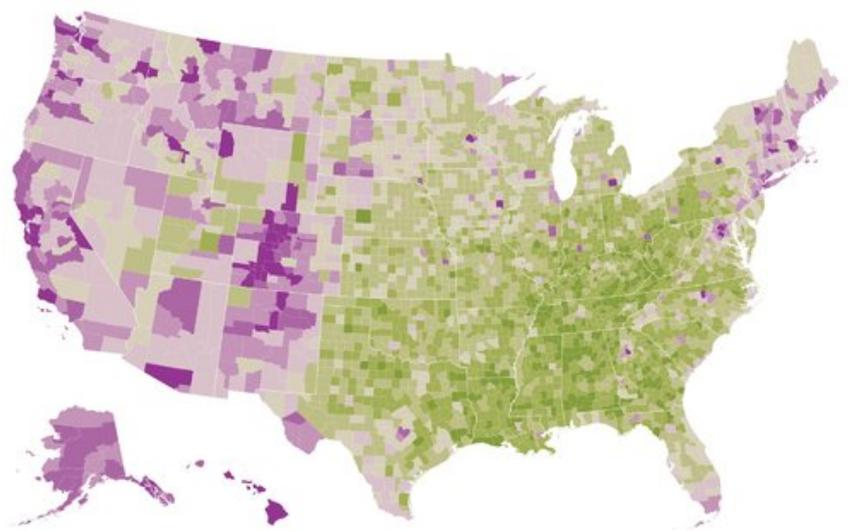
“It was evident from the start that cost overruns, schedule delays and problems with an untested construction method” would doom the project, said Tom Clements, a senior adviser at Friends of the Earth. State regulators have set a hearing on the issue for October.

Graphic

How Americans Think About Climate Change, in Six Maps

Americans overwhelmingly believe that global warming is happening, and that carbon emissions should be scaled back. But fewer are sure that it will harm them personally.

The two nuclear reactors still being built in Georgia are both AP1000s at the existing Vogtle nuclear power plant. Southern Company [has agreed to take over construction](#) of the Vogtle reactors in the aftermath of Westinghouse's bankruptcy, but that project is also facing delays and overruns. The reactors will have to come online before 2021 to qualify for federal tax credits, although Congress



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is working on a bill to extend that deadline.

Because they do not generate carbon dioxide emissions, nuclear plants [are often seen as a useful tool in battling climate change](#). Yet in the United States, few utilities today are willing to incur the risk that comes with building massive new reactors, preferring to stick with cheaper natural gas plants and smaller wind and solar farms.

If the United States had stricter climate policies, those calculations could shift, but that appears unlikely for now. President Barack Obama's Clean Power Plan, finalized in 2015, [would have given](#) South Carolina and Georgia credit against their state climate goals for finishing the new reactors, which may have persuaded local regulators to stick with the project. But the Trump administration is dismantling that plan.

South Carolina [currently gets 55 percent of its electricity](#) from nuclear power and 40 percent from coal and natural gas. The two reactors [were expected to push most of the state's remaining coal plants off the grid](#), reducing planet-warming emissions. But the failure of the project could lead to those coal units running for longer.

A number of companies are working on smaller, even more advanced reactor designs that they hope will prove easier and less risky to build than hulking light-water reactors. In January, Oregon-based NuScale Power [submitted the first application](#) for a small modular reactor to federal regulators, but the company does not expect to build its first working reactor until the 2020s.

Mr. Powell said the failure of the South Carolina project should not necessarily doom those advanced designs. But, he said, "This will still be a blow to nuclear supply chains, and it could make those new reactors incrementally more difficult to build."